



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,868	08/22/2003	Jong-hoon Lee	1293.1857	8642
21171	7590	10/30/2008		
STAAS & HALSEY LLP			EXAMINER	
SUITE 700			LAMB, CHRISTOPHER RAY	
1201 NEW YORK AVENUE, N.W.				
WASHINGTON, DC 20005				
			ART UNIT	PAPER NUMBER
			2627	
			MAIL DATE	DELIVERY MODE
			10/30/2008 PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/645,868

Applicant(s)

LEE ET AL.

Examiner

Christopher R. Lamb

Art Unit

2627

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-13, 15, 16, 18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-13, 15, 16, 18 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 10-13, 15, 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takasago et al. (US 4,830,290) in view of Kamiyama (US 6,341,113), and further in view of Nakane et al. (US 2002/0031069), and further in view of Kishimoto et al. (US 6,714,493).

Regarding claim 1:

Takasago discloses a method of controlling a recording operation of an optical disc recording apparatus which records data to a recordable optical disc having a defect (column 2, lines 30-45), the method comprising:

based on a length of the defect, classifying the defect into a first category indicating that the data is normally recordable and a second category indicating that the data is not normally reproducible even though the data is normally recordable (column 3, lines 25-60: the first category is when the duration is less than T_1 , the second when it is between T_1 and T_2);

detecting the defect while recording the data to the recordable optical disc (column 3, lines 25-60);

determining the length of the defect and a type of the defect based on the length of the defect (column 3, lines 25-60); and

as a result of the determining, if the defect corresponds to the first category, assuming that the data is normally recorded in a defect region and continuing recording of the data (column 3, lines 25-60: time less than T_1), or if the defect corresponds to the second category, further recording of the data recorded in the defect region in another region (column 3, lines 25-60: time between T_1 and T_2 ; it is re-recorded "in an alternate sector in the same track"),

the classifying comprising comparing the length of the defect with first and second times (column 3, lines 25-60).

Takasago does not disclose:

(A) "If the defect is detected, continuing recording of the data in the recordable disc while controlling a servo unit to hold a servo tracking by using a previous servo control value which is used before the defect occurs."

(B) conducting the further recording "without a read-after-write operation."

(C) wherein the first and second times are "determined according to a recording speed of the optical disc."

Regarding (A):

Kamiyama discloses: if a defect is detected, continuing recording of the data in the recordable disc while controlling a servo unit to hold a servo tracking by using a previous servo control value which is used before the defect occurs (column 1, lines 10-25).

Kamiyama discloses that this is necessary, because it is impossible to generate an appropriate tracking signal otherwise (column 1, lines 10-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Takasago wherein If the defect is detected, continuing recording of the data in the recordable disc while controlling a servo unit to hold a servo tracking by using a previous servo control value which is used before the defect occurs, as taught by Kamiyama.

The motivation would have been to generate an appropriate tracking signal, keeping the laser on-track, as taught by Kamiyama.

Regarding (B):

In Takasago, if the time is between T_1 and T_2 , there is further recording of the data recorded in the defect region in another region if it is deemed necessary during a read-after-write operation (column 3, lines 25-60).

Nakane discloses that when recording at a high transfer rate is required, a read-after-write operation ("verifying reproduction") should be omitted (paragraph 144).

Therefore it would have been obvious to one of ordinary skill at the time of the invention to include in Takasago in view of Kamiyama wherein the further recording is conducted without a read-after-write operation: instead, the information is automatically recorded in another area (following Takasago column 3, lines 25-60; also Nakane paragraph 118).

The motivation would have been to enable recording at a high transfer rate.

Regarding (C):

Kishimoto discloses that an optical disc apparatus may have a plurality of different speeds (column 11, lines 55-65).

It would have been obvious to include in Takasago in view of Kamiyama, and further in view of Nakane, wherein the apparatus records at a plurality of different speeds.

The motivation would have been to record at a higher and/or more appropriate speed.

If Takasago in view of Kamiyama, and further in view of Nakane, can record at a plurality of speeds, it must determine the first and second times according to a recording speed of the optical disc.

The rationale is as follows:

Takasago is measuring a defect size required to cause off-track in a reproducing apparatus (column 3, lines 25-60) by measuring the length (i.e., time) of a defect signal. If the apparatus is recording at x2 speed, the same size defect will produce a signal half as long as if the apparatus is recording at x1 speed. Therefore the speed must be taken into account in order to accurately measure the size of the defect.

Regarding claim 2:

Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, discloses: classifying the defect into a third category indicating that the data cannot be normally recorded and the defect causes a servo error (Takasago column 3, lines 25-60: time greater than T_2); as a result of the determining, if the defect

corresponds to the third category, stopping the recording operation (Takasago column 6, lines 40-50).

Regarding claim 3:

In Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, the recordable optical disc is a recordable compact disc (it is clear from Takasago's description in column 1 that Takasago's disc is a recordable compact disc).

Regarding claim 4:

Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, does not disclose that the recordable optical disc is a recordable digital video disc.

Nakane discloses recordable digital video discs (paragraphs 1-9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Takasago in view of Kamiyama, and further in view of Nakane, wherein the optical disc is a recordable digital video disc.

The motivation would have been to manage defects on such a disc, making the method more versatile.

Regarding claims 5-7:

All elements positively recited have already been identified with respect to claims 1-4.

Regarding claims 8, 10, and 11:

These are apparatus claims corresponding to method claims 1-4. Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, discloses an apparatus to accomplish the method. All elements of this claim have been identified with respect to the earlier rejections.

Regarding claim 12:

Takasago discloses a controller (Fig. 1: 30) and thus Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, includes a program executed by a processor to record data. All other elements of this claim have already been discussed with regards to earlier claims.

Regarding claim 13:

Most elements of this claim have already been discussed with regards to earlier claims. In Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, the first reference length is a maximum length of the defective region where a servo status is stable and data is readable without any additional operation of the optical disc recording apparatus after data is recorded (the T_1 threshold is one where the off-track is not considered to be severe enough to require writing in a different region: column 3, lines 1-60).

Regarding claim 15:

In Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, the second reference length is a maximum length of the defective region where a servo status is stable, but errors occur when the data is read after being recorded (the servo is not considered "off-track" to the point where the recording

operation has to be stopped, but the data must be rewritten in an alternate sector on the track: column 3, lines 1-60).

Regarding claim 16:

Most elements of this claim have been discussed with regards to earlier rejections. Regarding "wherein the reference length is a maximum length of the defective region where a servo status is stable and data is readable without any additional operation of the optical disc recording apparatus after data is recorded," see Takasago column 3, lines 30-60: if "the reference length is set shorter than a time necessary to cause off-track," it is the maximum length or shorter, meaning that the claim falls within the range disclosed by Takasago, and for "and if the defective region is longer than the reference length, recording the data in another region of the recordable optical disc without a read-after-write operation," recording without a read-after-write operation is taught by Nakane as discussed above.

Regarding claims 18 and 19:

All elements positively recited have been discussed with regards to earlier claims. No further elaboration is necessary.

Response to Arguments

3. Applicant's arguments filed July 24th, 2008 have been fully considered but they are not persuasive.

Applicant's only argument is that "the Examiner has not explained why one would have been motivated to combine Kishimoto with the remaining references."

The Examiner did provide a motivation in the rejection: so that the apparatus can record at a higher and/or more appropriate speed. Applicant argues that “these results do not require variable speed” and that Takasago, Kamiyama, and Nakane could achieve good results with just a single high speed.

However, the most appropriate speed is not necessarily the highest one. Kishimoto, for example, discloses that it might be necessary to select a lower speed in order to avoid abnormal actuator behavior (column 11, line 65 to column 12, line 15). Therefore one reason to have a plurality of speeds, as taught by Kishimoto, is that it allows selecting the highest speed that does not induce errors, depending on the current circumstances. A drive with just a single high speed does not have this flexibility. Therefore Kishimoto's teaching allows the apparatus to record at a higher and/or more appropriate speed, just as previously indicated in the rejection.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (571) 272-5264. The examiner can normally be reached on 9:00 AM to 5:30 PM Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph H. Feild/
Supervisory Patent Examiner, Art
Unit 2627